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ABSTRACT

These guidelines deal specifically with the context in which the measurement of interests occurs and the interpretive materials which are made available to test users. They are classified and discussed in three categories: guidelines intended to inform the test user of possible factors influencing a sex-biased response on interest inventories; guidelines intended to eliminate overt sex bias through modifying language and examples presented in interpretive materials; and guidelines intended for research, examining the context of testing and recommending orientation sessions to help respondents examine sex-role stereotypic sets toward activities and occupations. Previous research shows women's responses change under instructions designed to change the sex-stereotypes set; research on the psychology of women has examined career stereotypes, role stereotypes and the motive to avoid success. Research on the effect of orientation and set should take these variables into account, and a variety of studies can be undertaken to examine the effect of modifications in testing context on the validity of interest measurement for women. (Author/SE)

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Minimizing Sex Bias in Interest Measurement Through the Context of Testing and Interpretive Materials*

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Introduction

One section of the draft guidelines for the assessment of sex bias and sex fairness in interest inventories deals specifically with the context in which the measurement of interests occurs and the interpretive materials which are made available to test users and respondents. For some guidelines, a common sense of justice and the face validity of the instrument (and interpretive materials) make change a necessity. Other guidelines are, at this stage, more tentative and much in need of case studies, research, and extended discussion to arrive at some consensus on practices which will have the intended effect of minimizing sex bias. These guidelines on interpretive materials are in large part based on the literature review, analysis of materials and recommendations developed by Janice M. Birk in her paper prepared for the NIE Career Education Project on Sex Bias in Interest Measurement (Birk, 1974).

While the NIE working definition of sex bias has problems in terms of operational definition, how do we define the factors that limit "his or her consideration of a career solely on the basis of gender," I prefer this definition to others that have been suggested. I will take just a minute to say why, since one of the basic problems in interest measurement is that of reflecting the world as it is and was (the assumption of a stable system for prediction), i.e., the prediction of future behavior on the basis of past behavior. While some of us feel we can

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justify this approach, others such as Goldman (1972) have argued strongly that this view of the world results in data limited in its utility for counseling individuals.

The limitation of the measurement approach is inherent in the alternative view of sex bias proposed by Prediger and Hanson: "An interest inventory...can be considered to be sex-biased when the publisher uses or advocates arbitrary rules or procedures (rules or procedures unsupported by empirical evidence) for determining which career options will be suggested to an individual....(Prediger and Hanson, 1974, p. 5)." The example given to illustrate this definition is the degree to which suggested career options are disproportionate for males and females (i.e., sex restrictive by unequal proportions of each career option suggested to a general group of males and females). This definition provides some data for consideration as to sex bias, but it again takes the world as it is and restricts the future on the basis of the present and the past. Shifting occupational interests are also a function of knowledge about available opportunities, economic conditions, etc., which cannot be taken into account by a definition tied to particular sets of data.

This definitional problem has relevance to the problems of minimizing sex bias in testing context and interpretive materials, since some of the guidelines are aimed at, or have implications for, changing the respondent's and the test user's view of interest measurement for women. It is clear that users of interest inventories must become acquainted with problems of sex bias in interest measurement. Hallam (1973) has reviewed court decisions and legislation dealing with sex discrimination and states that "it seems reasonable to conclude that the following practices will be prohibited: ...Guidance practices directed toward establishing one-sex classes, as well as counseling practices, including testing, which tend to track girls or boys into sex-related career areas (p. 129)." There is also evidence that some counselors are misinformed about women and some of the

working conditions and employment opportunities they face (with males more misinformed than females); counselors also revealed more positive than negative attitudes about women and work, but evidenced ambivalence in these attitudes (Bingham and House, 1973 a, b).

Both the legal requirements and informal, as well as empirical, data suggest that the guidelines on testing context and interpretive material proposed in the NIE study will serve several functions: that of informing and influencing test users' and respondents' views of women's interests and the process of career choice for women; that of minimizing overt sex bias in interest inventories and interpretive materials; and that of encouraging research on the influence of factors in the testing process on the expression of measured interests. The guidelines which relate to each of these functions are briefly discussed below; particular attention is given to the third function, encouraging research, since there is least agreement on what these practices could be and their actual effects on the reliability and validity of interest measurement.

Guidelines for Informing

There are particular guidelines which are intended to inform and educate the test user and respondent about the interpretation of scores. These guidelines consider problems of score interpretation for separate or combined male and female norm or criterion groups, for homogeneous scales, and for special groups of women and men. In the latter instance, the guidelines recognize the probable effects of many years of stereotyping and the influence of past experiences and activities on interest inventory scores. In particular, the possible influences on women's interest scores of early socialization, traditional sex-role expectations of society, and the home versus career conflict are identified.

There are also several guidelines which deal with general issues in interest measurement. These include reminders that interest inventory scores are only one

type of information, and that all jobs are appropriate for persons of either sex (given comparable qualifications). Myths about men and women in the world of work, based on sex-role stereotypes, should be dispelled and exploratory experiences in areas where interests have not had a chance to develop should be encouraged. The interpretive materials should also address possible test user biases in regard to sex roles, and the transmission of these biases to the respondent.

Guidelines on Overt Sex Bias

Three guidelines are concerned with minimizing overt sex bias in interpretive materials and in the interpretation sessions of test user and respondent. One guideline states: "The written discussions in the interpretive materials (as well as all inventory text) should be stated in a way which overcomes the impression presently embedded in the English language that (a) people in general are of the male gender, and (b) certain social roles are automatically sex-linked." Specific writing guidelines are recommended: A Content Analysis of Sexual Bias in Commonly Used Psychology Textbooks (Birk, et al., 1974) and Guidelines for Improving the Image of Women in Textbooks (Scott, Foresman and Company, n.d.). Occupational titles should be stated in gender-neutral terms or both male and female titles be presented. Case studies and other examples used in interpretive materials should represent the concerns of men and women equally, and include a variety of nonstereotypic roles.

Guidelines for Research

One interpretive guideline was the subject of considerable discussion. This guideline recommends "...that the inventory be accompanied by orientation sessions dealing with possible influences of factors such as early socialization, traditional sex-role expectations of society, home-maker versus career conflict on women's and men's scores. Such orientation should encourage respondents to examine stereotypic "sets" toward activities and occupations and should help respondents to see that

there is no activity or occupation that is exclusively male or female."

Birk (1974) provided a review of the research which changed the "set" for women taking interest inventories, where the "set" which was manipulated dealt with changing sex-role stereotypes in some manner. Farmer and Bohn (1970) specifically manipulated instructions to reduce the home-career conflict for women; Sparks(cited in Birk 1974) changed instructions for high school girls. Both studies used the SVIB-W and resulted in increased scores on career scales (physician, lawyer, etc.) for women. A related area of study has been the administration of the men's form of the SVIB to women. Birk's review of these studies indicates that administering the men's form to women had some advantages in resulting in higher scores for some scales on the men's form. This meant that women taking only the women's form might overlook occupational areas in which the respondent's interests were similar to those of men.

The results of another set of studies are also relevant to the guideline recommendation on orientation--those studies which have, on the whole, indicated that women with deviant or non-conforming career aspirations may face bias in the counseling setting (Birk, 1974, pp. 26-33).

There are obvious questions to be raised about implementing the guidelines recommending orientation sessions. It is left unspecified when the orientation session should occur in relationship to the actual test administration, whether all women and men do in fact have sex-role stereotypic sets toward occupations and activities on interest inventories, and what influence an orientation session could or would have on test reliability and validity.

In the absence of studies examining for whom and what effect might result from variations in orientation, it is likely that most test users will choose to provide an orientation related to sex-role stereotypes in a very general manner, not specifically directed at influencing the set for test taking. Under this approach, it will be a matter of individual choice whether to provide the test-

taking experience first, then discuss the influence of sex-role stereotypes on career choice, or to provide the discussion, then the test taking experience.

Following a general orientation procedure, the recommended guideline does not seem in direct conflict with test standardization procedures. As Dyer (1973) has noted, within the various groups of people involved in testing there is an extraordinary amount of diversity in their understanding of tests and their attitudes toward testing. Although his comment arose in a discussion of achievement testing, it is appropriate to a discussion of the context of interest measurement.

Informal conversation also provides non-systematic but useful information on the varied approaches taken by counselors in the administration of interest inventories. There is no standard orientation with which students and other respondents approach taking an interest inventory. At this stage, very little is known about the effects of these varied testing contexts on test outcomes. We could not predict the influence or lack of incluence of specific changes in test context on test reliability and validity, except in a general way as Dyer has discussed the effect on reliability. Dyer states that there is a "...common sense notion that pluralism in the test givers interacts with pluralism in the test takers in ways to depress the reliability of test data...that the reliability of a test does not inhere solely in the testing instrument itself, but in the total testing process (Dyer, 1973, pp. 92-93)."

Studies are needed to examine the influence on reliability of modifying test orientation procedures and/or the introduction of specific sets designed to reduce the influence of sex role stereotypes. The main emphasis of new research, however, must study the effects of orientation procedures and changing "sets" on the validity of interest inventory scores.

There have been several areas of research on the psychology of women which are likely to interact with orientation and set. These variables need to be considered in the design of studies on the effects of changing test context on test

validity. Horner (1969) has illustrated the ambivalent feelings of many American college women toward intellectual achievement. Helson (1972) has discussed the research which examines the image of the career women, and noted there are differing attitudes about the priorities of sex roles over occupational roles. Alper (1974) has reviewed the research on achievement motivation in college women and also described the development of a scale to measure masculine-feminine role orientation. The Wellsley Role-Organization Scale (WROS) includes items in three main areas: traits; role activities; and career and/or career oriented activities. Without considering the general research data on the WROS, it appears that at least two areas of this scale are important to the design and analysis of research modifying the context of interest measurement. The effects of changing sets are likely to vary as a function of the "strength" or degree of career stereotyping held by a woman and also as a function of the strength of the general orientation or stereotyping of a woman's role. For interest measurement purposes, this might well be assessed in terms of a home-maker versus career conflict.

Measures of the degree of career stereotyping, role stereotyping, and avoidance of success may result in identifying groups of men and women for whom different orientation procedures or sets would result in different effects on interest inventory scores. These variables may function as moderator variables affecting the validity of inventory scores. This analysis may be particularly relevant if validity is studied in terms of criterion groups of women in selected occupations.

Cole and Hanson (1974) have discussed the validity of interest inventories in terms of people-similarity validation and activity-similarity validation. In either case, modifying the orientation to testing, or, more directly, the "set" to eliminate sex-role stereotypes, home-maker/career conflicts, and the motive to avoid success, for criterion groups of women, would provide data for comparison between criterion groups. That is, would discrimination (validity) be maintained

under changed orientation or set?

Research using criterion groups is needed and possible. Another approach to validity is suggested by Cole and Hanson. Prediger's view is that interest inventory results should be embedded in the broad career exploration process. In this view, "in which further exploration follows any inventory results, the negative impact of incorrect inventory predictions can be minimized (Cole and Hanson, 1974, p. 27)." Taking this perspective, less stringent forms of validity studies can be designed. These might take the form of user reaction to the appropriateness of inventory results, including reaction after exploration of the suggested occupation (Cole and Hanson, 1974). Other less stringent forms of assessing the validity of interest scores under changed orientation or set would be in terms of directly expressed occupational preferences, preferences obtained by card sorts on occupations, picture stimuli, and job activities linked to occupations or other stimuli.

A variety of stimuli can be used to try to establish the "valid" interests of women, and these can be contrasted with the interests expressed on interest inventories. The construct validity of measured interests may be explored in other ways also. Prediger and Hanson (1974) suggest interest inventories free of sex restrictions should result in similar proportions of men and women suggested for each occupation. Another perspective on the effect of changing the set for women would be to examine these occupational proportions under a changed set designed to alter sex stereotypes.

Summary

One area emphasized in the guidelines for sex bias in interest measurement is the context of testing and interpretive materials. Specific guidelines can be classified as to their intent to inform the test user and respondent of possible factors influencing a sex-biased response on interest inventories, how to interpret scores based on different types of norm groups, and general principles in interest measurement important in the elimination of sex bias.

Other guidelines can be classified on their intent to eliminate overt sex bias through modifying language and examples presented in interpretive materials. A third set of guidelines for interpretive materials dealt specifically with the context of testing and recommended orientation sessions to help respondents examine sex-role stereotypic sets toward activities and occupations. Previous research shows women's responses change under instructions designed to change the sex-stereotyped set; research on the psychology of women has examined career stereotypes, role stereotypes and the motive to avoid success. Research on the effect of orientation and set should take these variables into account, and a variety of studies can be undertaken to examine the effect of modifications in testing context on the validity of interest measurement for women. The results of the investigation of the effects of orientation and changed set on the expressed interests of women will be a better understanding of the development and measurement of interests for women, and an examination of the construct validity of interest inventories.

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